

SECTION 16410
LIGHTING FIXTURES

PART 1 - GENERAL

1.1 LIGHTING FIXTURES

- A. Fixtures shall be UL approved, listed and labeled for the particular installation. Lighting fixtures shall be provided complete with lamps, mounting hardware, accessories, canopies, necessary guards, straps, supports or hangers and other miscellaneous materials and devices to assure satisfactory installation and desired function where installed and shall be approved before installation.

PART 2 - PRODUCTS

2.1 FIXTURES

- A. Fixtures shall be as indicated as detailed on drawings. Cuts and descriptions of all fixtures shall be submitted for approval before ordering. When requested, samples of the fixtures, shall be provided.

2.2 LAMPS

- A. Provide as indicated on fixture details.

2.3 BALLASTS

- A. Fluorescent ballasts shall be ETL and UL approved and shall be energy saving electronic type compatible with lamps specified. Fixtures shall be designed for use with these electronic ballasts and shall have thermal characteristics that will minimize operation of ballast over-heat devices under all normally expected operation conditions. Ballasts shall have a Class A sound rating.
- B. HID ballasts shall be of the constant wattage, high power factor type. HPS ballasts shall have solid state igniter/starter.
- C. Ballasts which are not quiet and hum-free will be rejected and shall be replaced by the Contractor at no additional cost to Owner.
- D. Ballasts in unconditioned spaces or outdoors shall be rated for operation in high or low temperature environments.

2.4 FLUORESCENT EMERGENCY LIGHTING UNITS

- A. Each unit shall consist of an automatic power failure device, test switch operable from outside of the fixture, pilot light visible from outside the fixture, and fully automatic solid-state charger in a self-contained power pack. Charger shall be either trickle, float, constant current or constant potential type, or a combination of these. Battery shall be sealed electrolyte type with capacity as required to supply power to two lamps for 90 minutes at a minimum of 25 percent of the lamps rated lumen output. Battery shall operate unattended and require no maintenance, including no additional water, for a

period of not less than 5 years. Emergency ballasts which are provided with fixtures containing solid-state ballasts shall be suitable for use with solid-state ballasts.

PART 3 - EXECUTION

3.1 LIGHTING FIXTURES

- A. Locations of fixtures in ceiling shall be in accordance with the reflected ceiling plan. Contractor's attention is directed to coordinating with lighting fixtures and mechanical equipment in all spaces. Where recessed lighting fixtures are indicated, this Contractor shall be responsible for coordinating the type fixtures with the actual ceiling being installed. This shall include all changes resulting from substitute items, change orders, etc.
- B. All surface mounted fluorescent lighting fixtures shall be mounted independent of ceiling construction. All fluorescent lighting fixtures mounted in or on plaster ceiling shall also be mounted independent of ceiling construction. Where recessed fluorescent lighting fixtures occur in lay-in tile or concealed spline ceiling the electrical contractor shall have the ceiling contractor install additional supporting hangers where fixtures occur.
- C. No fixtures shall be hung with zip-clips.
- D. Recessed and flush mounted fixtures shall be of type which can be relamped from bottom except as otherwise specified. Trim for exposed surface or flush mounted fixture shall be as detailed for that fixture.
- E. Flush or recessed fixtures shall be provided with separate junction boxes, and fixtures shall be readily removable for access to the boxes or ceiling access panels shall be provided.
- F. Pendant mounted fixtures and devices shall be supported with swivel type hanger to ensure plumb installation.

END OF LIGHTING FIXTURES